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(71) Applicant: **LUCENT TECHNOLOGIES INC.**
Murray Hill, New Jersey 07974-0636 (US)

(72) Inventors:
• **Barker, William Edward**
Geneva, Illinois 60134 (US)
• **Connelly, Lisa M.**
Lisle, Illinois 60532 (US)
• **Eggert, Marvin A.**
Aurora, Illinois 60506 (US)

- **Foley, Michael P.**
Elmwood Park, Illinois 60707 (US)
- **MacFarlane, Kenneth R.**
Wheaton, Illinois 60187 (US)
- **Parsons, Phillip M.**
Lisle, Illinois 60532 (US)
- **Ral, Girish**
Bartlett, Illinois 60103 (US)
- **Rog, Jerry Edward**
Bartlett, Illinois 60103 (US)
- **Vangsness, Kurt A.**
Aurora, Illinois 60506 (US)

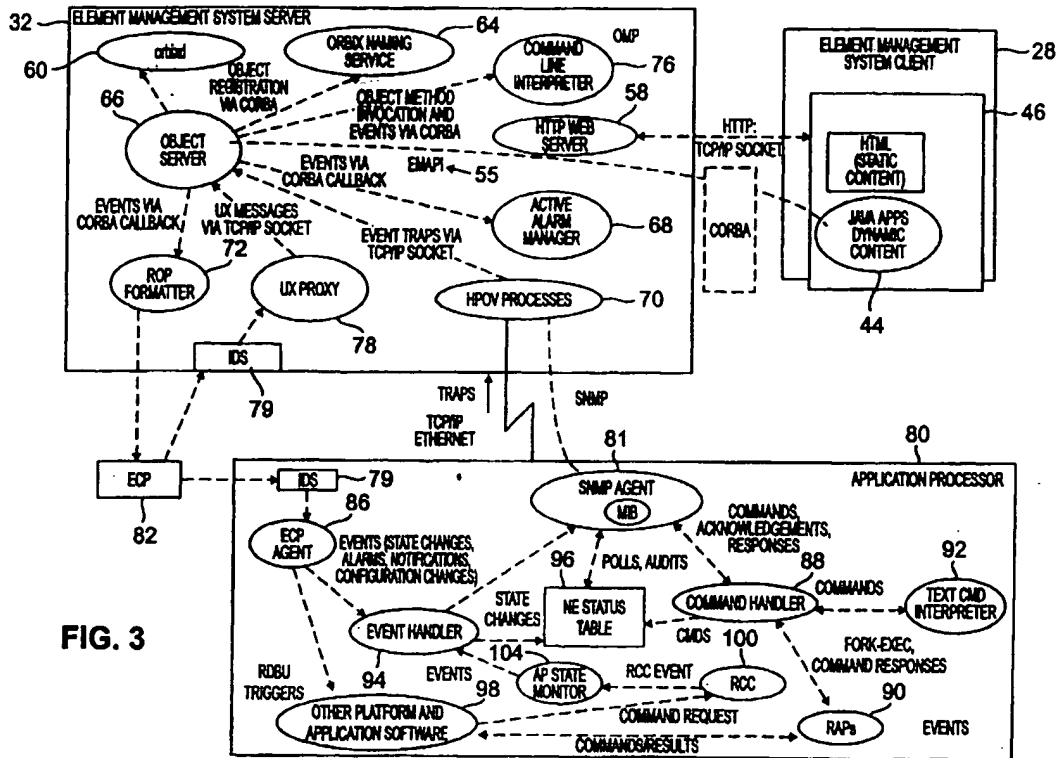
(74) Representative:
Watts, Christopher Malcolm Kelway, Dr. et al
Lucent Technologies (UK) Ltd,
5 Mornington Road
Woodford Green Essex, IG8 0TU (GB)

(54) **Method for computer internet remote management of a telecommunication network element**

(57) In accordance with the invention, a method is provided for remotely managing a plurality of network element of a telecommunications network through a special communication link including a computer internet such as a local area network, the world_wide web or the Internet. A management computer is connected to an element management system server through a communication link including the computer internet. At least one of the plurality of network elements is also coupled to the element management server through the computer internet and the at least one of the plurality of network elements is managed via communications conveyed through the element management server between the management computer and the at least one network element. Preferably, management is facilitated by the management server generating an interactive web page at a client workstation with objects associated with management of the at least one network element. The interactive web page is transmitting from the management server through the computer internet to the management computer and displayed at the interactive web page at the management computer for manage-

ment communications between the management computer and the network element. Objects of the interactive web page include objects associated with preferably all three of operation, administration and maintenance of the network element. The interactive web page includes detailed status summary page for each network element of the telecommunications network, a relatively high system status summary of all the plurality of network elements and a list of all active alarms within the telecommunications network. The plurality of network elements each have an associated applications processor with a management agent application for interfacing the element management server with the network element. The application processor includes a maintenance application for performing maintenance of the network element command request are interfaced from the element management server through the management agent application to the maintenance application to selectively perform maintenance tasks. The element management server is provided with application processor specific events and command acknowledgments.

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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 3867

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cls)
X	LARSEN A K: "A SPEC FOR WEB-BASED MANAGEMENT LEAVES SOME KEY ISSUES UNADDRESSED" DATA COMMUNICATIONS,US,MCGRAM HILL. NEW YORK, vol. 26, no. 3, 1 March 1997 (1997-03-01), pages 43-44,46, XP000659543 ISSN: 0363-6399	1,11,16	H04L12/24 H04L29/06 H04L12/26 H04Q3/00
Y	* the whole document *	2-6,15, 17-20, 22,31	
A		7-10,12, 13	
Y	WO 98 04067 A (CISCO SYSTEMS INC) 29 January 1998 (1998-01-29)	2-6	
A	* abstract *	1,7-13, 16	
	* page 5, line 12 - page 6, line 25 *		TECHNICAL FIELDS SEARCHED (Int.Cls)
	* page 9, line 30 - page 12, line 20 *		H04L
	* page 23, line 10 - page 25, line 12 *		H04Q
	* claims 19,20 *		
	* figures 2-4 *		
X	CARLSUND P ET AL: "AN ELEMENT MANAGER BASED ON WEB TECHNOLOGY" ERICSSON REVIEW,SE,ERICSSON. STOCKHOLM, no. 1, 1998, pages 46-51, XP000734509 ISSN: 0014-0171	1,11,16	
A	* the whole document *	2-10,12, 13	
-/-			
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 September 2001	Examiner Cichra, M
CATEGORY OF CITED DOCUMENTS		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons A: non-written disclosure P: intermediate document	
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EPO FORM 1800 (04/98) (prev. 01)



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Application Number
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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 3867

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THIS APPLICATION (Int.Cls.)
X	ROLF M: "WEB TECHNOLOGY BASED NETWORK ELEMENT MANAGEMENT OF AN ATM SWITCH" ISS. WORLD TELECOMMUNICATIONS CONGRESS. (INTERNATIONAL SWITCHING SYMPOSIUM), CA, TORONTO, PINNACLE GROUP, 21 September 1997 (1997-09-21), pages 589-594, XP000704515	1, 11, 16	
A	* the whole document *	2-10, 12, 13	
X	CANELA Z ET AL: "INTEGRATING WEB-BASED USER INTERFACES IN TMN SYSTEMS" NOMS '98. 1998 IEEE NETWORK OPERATIONS AND MANAGEMENT SYMPOSIUM. NEW ORLEANS, LA, FEBR. 15 - 20, 1998, IEEE NETWORK OPERATIONS AND MANAGEMENT SYMPOSIUM, NEW YORK, NY: IEEE, US, vol. 1 CONF. 10, 3 November 1997 (1997-11-03), pages 110-129, XP000799766 ISBN: 0-7803-4352-2 * the whole document *	14	
A	MEER DE H ET AL: "TUNNEL AGENTS FOR ENHANCED INTERNET QOS" IEEE CONCURRENCY, IEEE SERVICE CENTER, PISCATAWAY, NY, US, vol. 6, no. 2, 1 Apr 11 1998 (1998-04-01), pages 30-39, XP000752815 ISSN: 1092-3063 * the whole document *	14	TECHNICAL FIELDS SEARCHED (Int.Cls.)
		-/-	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 September 2001	Examiner Cichra, M
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EPO FORM 1503 (04/96) (P04001)



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LACK OF UNITY OF INVENTION
SHEET B

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-13,16

Method for managing network elements from a management computer via the Internet via a management server, where the

- management server generates an interactive WEB-page associated with management of a network element
- management server transmits the above WEB-page to the management computer via the Internet
- interactive WEB-page contains a menu of individual maintainance unit command options.

2. Claim : 14

Method for managing network elements from a management computer via the Internet, where the

Internet is the Word Wide Web and JAVA applications are run on both the management computer and the managed elements.

3. Claim : 15

Method for managing network elements from a management computer via the Internet, where the

network element has a management agent responding to various actions and the step of managing includes correlation of responses from the agent with the actions which caused the responses.

4. Claims: 17,20,21

Method for managing network elements from a management computer via the Internet, where the

- network element has a management agent application and
- polling requests are received from a plurality of management computers and
- multiple polling requests for the same attributes are treated as if they were only one request.

5. Claims: 18,19

Method for managing network elements from a management computer via the Internet, where the



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

access from the management computer to the management server is restricted by a password and encryption.

6. Claim : 22

Method for managing network elements from a management computer via the Internet, where a

list of active alarms is maintained for each network element and updated upon occurrence of either one of actuation of a new alarm and clearing of a former alarm.

7. Claims: 23-33

Providing distributed network element management by selectively running a management application at a plurality of workstations,

- the workstations being connected to an element management server via the Internet,
- the element management server being connected to the managed network elements via a management agent application.



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DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)	
A	YUCEL S ET AL: "MULTIMEDIA QOS SERVICE AND MANAGEMENT ARCHITECTURE USING CORBA/JAVAPLATFORM" ANNUAL REVIEW OF COMMUNICATIONS, NATIONAL ENGINEERING CONSORTIUM, CHICAGO, IL, US, vol. 51, 1998, pages 715-722, XP000793173 ISSN: 0886-229X * the whole document *	14		
Y	US 5 751 914 A (COLEY BRETT ANGUS ET AL) 12 May 1998 (1998-05-12) * abstract * * column 1, line 36-54 * * column 4, line 31-50 * * claims 1-10 * * figure 3 *	15		
A	US 5 748 098 A (GRACE ANDREW) 5 May 1998 (1998-05-05) * abstract * * column 2, line 50 - column 3, line 10 * * column 4, line 13-28 * * claims 1,8-11,14 *	15		TECHNICAL FIELDS SEARCHED (Int.Cl.6)
A	WO 97 44937 A (CABLETRON SYSTEMS INC) 27 November 1997 (1997-11-27) * abstract * * page 3, line 22 - page 4, line 12 * * page 12, line 9 - page 13, line 2 * * claims 6,14,21,26 * * figure 6 *	15		
The present search report has been drawn up for all claims				
Place of search THE HAGUE		Date of completion of the search 10 September 2001	Examiner Cichra, M	
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technical prior art O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

EPO FORM 1503 (03/02 (P/C/01))



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cls)
Y	MAKINAE N ET AL: "COMMUNICATION PLATFORM FOR SERVICE OPERATIONS SYSTEMS IN ADVANCED INTELLIGENT NETWORK" 1997 IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS. MONTREAL, JUNE 8 - 12, 1997, IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS (ICC), NEW YORK, IEEE, US, vol. 2, 8 June 1997 (1997-06-08), pages 872-877, XP000742063 ISBN: 0-7803-3926-6	17,20	
A	* the whole document *	18,19,21	
P,X	MICHEL T ET AL: "COLLABORATIVE NETWORK MANAGEMENT" MILCOM '98. IEEE MILITARY COMMUNICATIONS CONFERENCE PROCEEDINGS. BOSTON, MA, OCT. 19 - 21, 1998, IEEE MILITARY COMMUNICATIONS CONFERENCE, NEW YORK, NY: IEEE, US, vol. 2, 19 October 1998 (1998-10-19), pages 599-603, XP000830601 ISBN: 0-7803-4507-X	17	
A	* the whole document *	20,21	TECHNICAL FIELDS SEARCHED (Int.Cls)
A	LIU H ET AL: "WWW-BASED INTERNET RESOURCE MANAGEMENT SYSTEM" NOMS '98. 1998 IEEE NETWORK OPERATIONS AND MANAGEMENT SYMPOSIUM. NEW ORLEANS, LA, FEBR. 15 - 20, 1998, IEEE NETWORK OPERATIONS AND MANAGEMENT SYMPOSIUM, NEW YORK, NY: IEEE, US, vol. 1 CONF. 10, 3 November 1997 (1997-11-03), pages 11-20, XP000799756 ISBN: 0-7803-4352-2 * the whole document *	17,20, 21,23	
-/-			
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 September 2001	Examiner Cichra, M
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technical background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons @: member of the same patent family, corresponding document	

EPO FORM 1203 (01.02 (P0407))



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EP 99 30 3867

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	BOGLER G ET AL: "TMN IN THE INTERNET AGE: NETWORK MANAGEMENT BY MULTIPARTY COOPERATION" ISS '97. WORLD TELECOMMUNICATIONS CONGRESS. (INTERNATIONAL SWITCHING SYMPOSIUM). GLOBAL NETWORK EVOLUTION: CONVERGENCE OR COLLISION? TORONTO, SEPT. 21 - 26, 1997. ISS. WORLD TELECOMMUNICATIONS CONGRESS. (INTERNATIONAL SWITCHING SYMPOSIUM), TORONTO, P, vol. 2, 21 September 1997 (1997-09-21), pages 603-609, XP000704517 * the whole document *	17,20, 21,23	
X	JANDER M: "WELCOME TO THE REVOLUTION" DATA COMMUNICATIONS, MCGRAW HILL. NEW YORK, US, vol. 25, no. 16, 21 November 1996 (1996-11-21), pages 39-42,44,46,48,50,52-53, XP000633488 ISSN: 0363-6399 * the whole document *	18,19	
P,Y	US 5 761 502 A (JACOBS ANDREW ROBIN) 2 June 1998 (1998-06-02) * the whole document *	18,19	
P,Y	WO 99 15950 A (DEGRAFT JOHNSON JAMES ;FRANKLIN PAUL GLENN (US); HOLFORD WILLIAM C) 1 April 1999 (1999-04-01) * abstract * * page 5, line 1 - page 6, line 16 * * page 26, line 5 - page 27, line 10 * * page 31, line 17 - page 33, line 21 * * page 37, line 15 - page 38, line 15 * -/-	22	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 10 September 2001	Examiner Cichra, M
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technical background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document</p>			

EPO FORM 1533 (01.01.99) (PUB/01)



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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 3867

DOCUMENTS CONSIDERED TO BE RELEVANT				
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.8)	
A	CASTORI P: "Extending MMS event detection to satisfy user-provided predicate-based conditions" COMPUTERS IN INDUSTRY, ELSEVIER SCIENCE PUBLISHERS. AMSTERDAM, NL, vol. 32, no. 1, 5 December 1996 (1996-12-05), pages 1-15, XP004015624 ISSN: 0166-3615 * the whole document *	22		
P,X	ANONYMOUS: "Method for Agent Construction" RESEARCH DISCLOSURE, vol. 41, no. 410, 1 June 1998 (1998-06-01), XP002177150 Havant, UK, article No. 41085 * the whole document *	22		
X	ANDERSON J M: "DISTRIBUTED NETWORK MANAGEMENT IN AN INTERNET ENVIRONMENT" IEEE GLOBAL TELECOMMUNICATIONS CONFERENCE. PHOENIX, ARIZONA, NOV. 3 - 8, 1997, GLOBAL TELECOMMUNICATIONS CONFERENCE (GLOBECOM), NEW YORK, IEEE, US, vol. 1, 3 November 1997 (1997-11-03), pages 180-184, XP000737531 ISBN: 0-7803-4199-6 * the whole document *	23		TECHNICAL FIELDS SEARCHED (Int.Cl.8)
Y A		24-26,31 27-30, 32,33		
—		—/—		
The present search report has been drawn up for all claims				
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EP 99 30 3867

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (InCLUs)
Y	SHUKLA R ET AL: "TOSS: TONICS FOR OPERATION SUPPORT SYSTEMS SYSTEM MANAGEMENT: USING THE WORLD WIDE WEB AND INTELLIGENT SOFTWARE AGENTS" NOMS '98. 1998 IEEE NETWORK OPERATIONS AND MANAGEMENT SYMPOSIUM. NEW ORLEANS, LA, FEBR. 15 - 20, 1998, IEEE NETWORK OPERATIONS AND MANAGEMENT SYMPOSIUM, NEW YORK, NY: IEEE, US, vol. 1 CONF. 10, 3 November 1997 (1997-11-03), pages 100-109, XP000799765 ISBN: 0-7803-4352-2	24-26,31	
A	* the whole document *	18,19, 27-30, 32,33	
			TECHNICAL FIELDS SEARCHED (InCLUs)
The present search report has been drawn up for all claims			
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10-09-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9804067 A	29-01-1998	US 6008805 A	28-12-1999
		AU 3796197 A	10-02-1998
US 5751914 A	12-05-1998	NONE	
US 5748098 A	05-05-1998	AU 671194 B	15-08-1996
		AU 6111794 A	14-09-1994
		CA 2154585 A	01-09-1994
		CN 1121384 A, B	24-04-1996
		DE 69410447 D	25-06-1998
		DE 69410447 T	08-10-1998
		DK 686336 T	18-01-1999
		EP 0686336 A	13-12-1995
		ES 2117255 T	01-08-1998
		WO 9419912 A	01-09-1994
		HK 1011162 A	02-07-1999
		JP 2823698 B	11-11-1998
		JP 8506947 T	23-07-1996
		SG 47696 A	17-04-1998
WO 9744937 A	27-11-1997	US 6131112 A	10-10-2000
		AU 720079 B	25-05-2000
		AU 3005097 A	09-12-1997
		CA 2254141 A	27-11-1997
		EP 0898822 A	03-03-1999
US 5761502 A	02-06-1998	CA 2241905 A	10-07-1997
		EP 0870383 A	14-10-1998
		JP 2000503183 T	14-03-2000
		WO 9724838 A	10-07-1997
WO 9915950 A	01-04-1999	AU 1062499 A	12-04-1999
		AU 9582798 A	12-04-1999
		AU 9582998 A	12-04-1999
		AU 9583198 A	12-04-1999
		AU 9583298 A	12-04-1999
		AU 9583398 A	12-04-1999
		AU 9583598 A	12-04-1999
		AU 9583698 A	12-04-1999
		AU 9584098 A	12-04-1999
		AU 9666398 A	12-04-1999
		AU 9667198 A	12-04-1999
		AU 9667298 A	12-04-1999
		AU 9667598 A	12-04-1999
		AU 9667698 A	12-04-1999
		AU 9667898 A	12-04-1999

EPO FORM P0009

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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10-09-2001

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9915950 A		AU 9667998 A	12-04-1999
		AU 9668098 A	12-04-1999
		AU 9668298 A	03-05-1999
		AU 9777098 A	12-04-1999
		AU 9777298 A	12-04-1999
		AU 9777398 A	12-04-1999
		EP 1015995 A	05-07-2000
		EP 1015970 A	05-07-2000
		EP 1015986 A	05-07-2000
		WO 9915984 A	01-04-1999
		WO 9915960 A	01-04-1999
		WO 9916230 A	01-04-1999
		WO 9915974 A	01-04-1999
		WO 9915975 A	01-04-1999
		WO 9916206 A	01-04-1999
		WO 9916198 A	01-04-1999
		WO 9915977 A	01-04-1999
		WO 9916207 A	01-04-1999
		WO 9915988 A	01-04-1999
		WO 9915996 A	01-04-1999
		WO 9916002 A	01-04-1999
		WO 9916218 A	01-04-1999
		WO 9916099 A	01-04-1999
		WO 9915989 A	01-04-1999
		WO 9915978 A	01-04-1999
		WO 9915979 A	01-04-1999
		WO 9916202 A	01-04-1999
		WO 9919803 A	22-04-1999
		WO 9916203 A	01-04-1999
		US 6115040 A	05-09-2000
		US 6032184 A	29-02-2000

EPO FORM P4889

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